

L. B. & N. GOLDBERG.
 KNOCKDOWN STOVE.
 APPLICATION FILED AUG. 28, 1911.

1,051,217.

Patented Jan. 21, 1913.

2 SHEETS—SHEET 1.

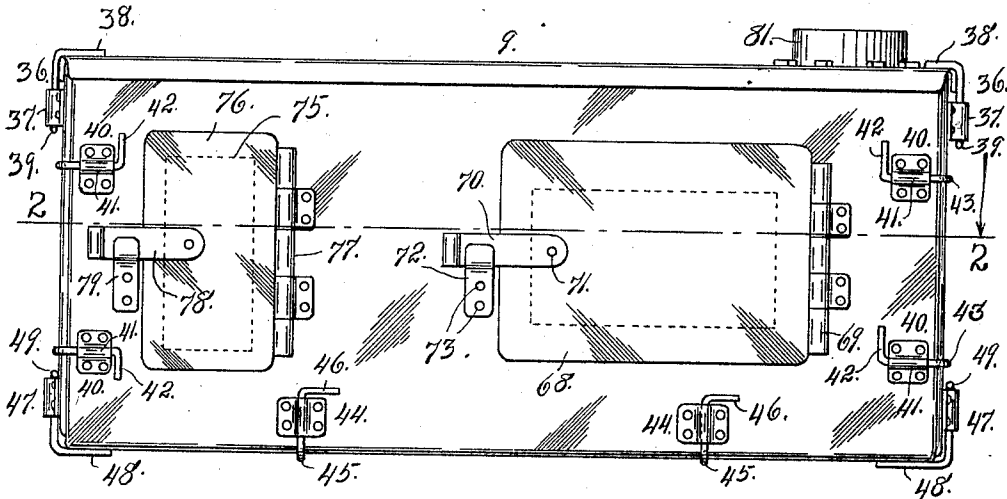


Fig. 1.

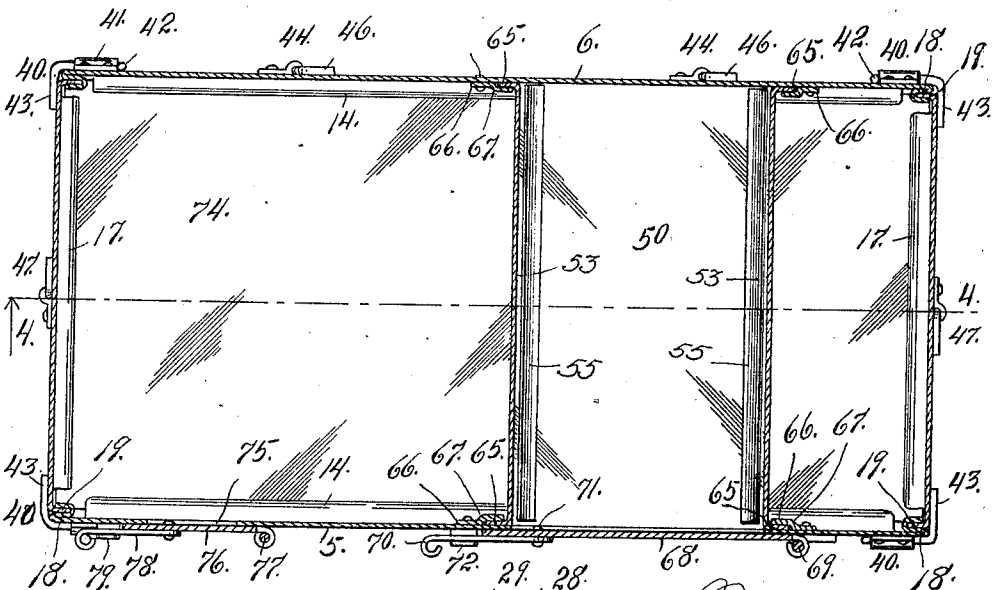


Fig. 2.

Witnesses

Otto E. Haddick.
 C. H. Rossona.

Fig. 3.

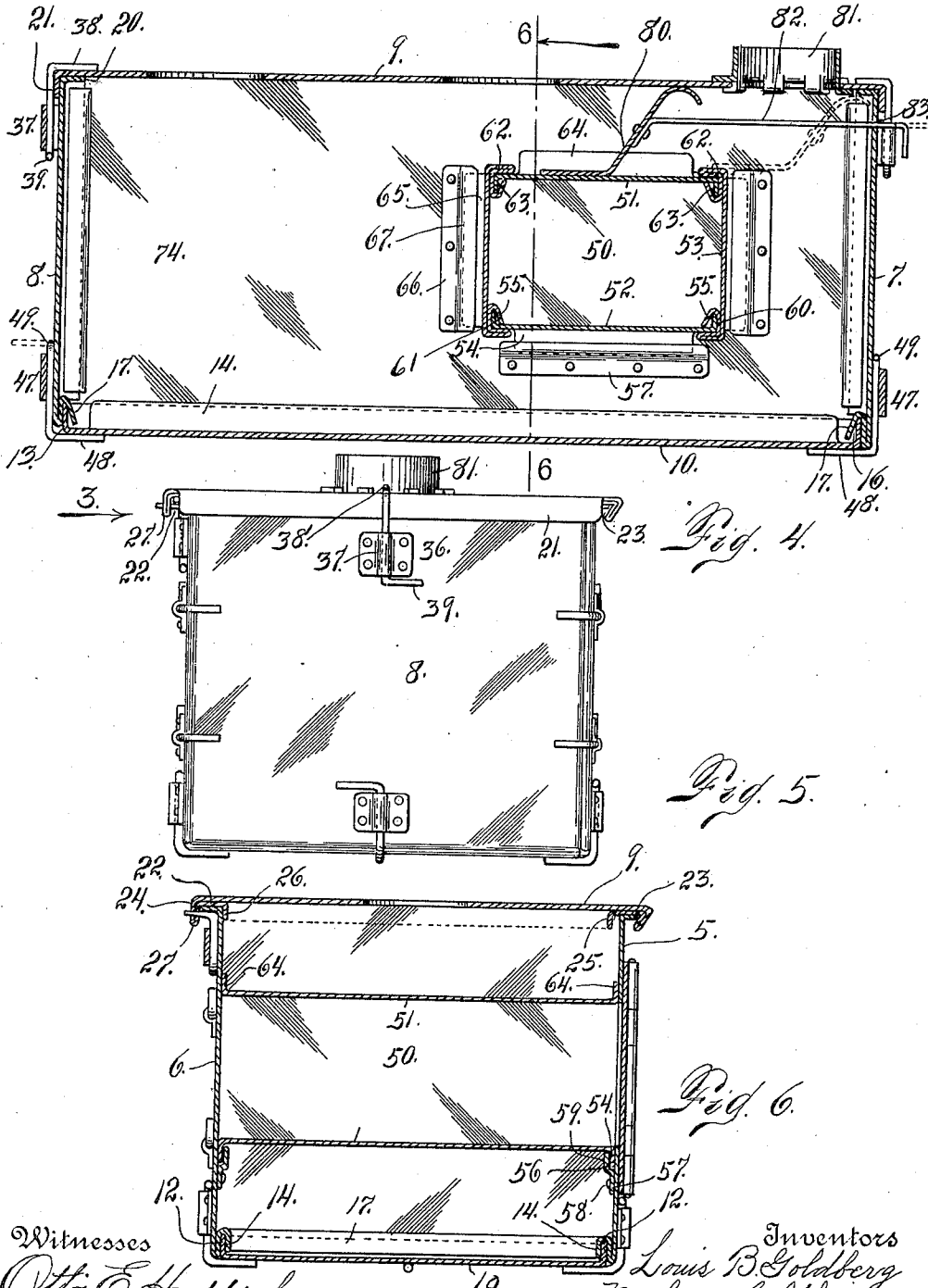
Inventors
 Louis B. Goldberg
 Nathan Goldberg.
 By A. J. O'Brien Attorney

L. B. & N. GOLDBERG.
KNOCKDOWN STOVE.
APPLICATION FILED AUG. 28, 1911.

1,051,217.

Patented Jan. 21, 1913.

2 SHEETS—SHEET 2.



Witnesses
Otto E. Hoddick.
C. H. Rossoner.

Inventors
Louis B. Goldberg
Nathan Goldberg.
By *H. J. O'Brien* Attorney

UNITED STATES PATENT OFFICE.

LOUIS BENJAMIN GOLDBERG AND NATHAN GOLDBERG, OF DENVER, COLORADO.

KNOCKDOWN STOVE.

1,051,217.

Specification of Letters Patent.

Patented Jan. 21, 1913.

Application filed August 28, 1911. Serial No. 646,327.

To all whom it may concern:

Be it known that we, LOUIS BENJAMIN GOLDBERG and NATHAN GOLDBERG, citizens of the United States, residing in the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in Knockdown Stoves; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

Our invention relates to improvements in knock down stoves, more especially intended for use by campers and others who are traveling about from place to place. By virtue of this construction of stove, it becomes practicable when the stove is not in use, to separate its various parts from one another and place them together in a small compass or in compact form, thus making it very convenient to carry upon a pack animal or other conveyance where but small space is available.

Our present object is to provide a device of this class which shall be simple and economical in construction, reliable, durable and efficient in use, and to these ends the invention consists of the features, arrangements and combinations hereinafter described and claimed, all of which will be fully understood by reference to the accompanying drawing, in which is illustrated an embodiment thereof.

In this drawing: Figure 1 is a side elevation of our improved knock down stove. Fig. 2 is a horizontal section, taken on the line 2—2, Fig. 1, looking downwardly. Fig. 3 is a fragmentary side view of the upper part of the stove on the side opposite that shown in Fig. 1. This is a view looking in the direction of arrow 3, Fig. 5. Fig. 4 is a vertical longitudinal section, taken on the line 4—4 of Fig. 2. Fig. 5 is an end elevation of the stove. Fig. 6 is a cross section, taken on the line 6—6 of Fig. 4.

The same reference characters indicate the same parts in all the views.

Let the numerals 5 and 6 designate the vertical side walls of the stove; 7 and 8 the end walls thereof; and 9 and 10 the top and bottom members, respectively, of our improved knock down stove. The bottom

10 of the stove is provided at its opposite side and end edges with upturned flanges the side flanges being designated 12, and the end flanges 13. The lower edges of the side walls are provided with grooves 14, which open downwardly, the said grooves being formed by bending the material of the side walls first upwardly against the walls on the inside, and then over and downwardly. These grooves 14 receive the upturned side flanges 12 of the bottom member of the structure. The lower edges of the end members 7 and 8 are also provided with grooves 16 to receive the upturned end flanges 13 of the bottom member. These grooves 16 are formed by bending the material of the end wall inwardly and upwardly against the wall on the inside, and then downwardly, the downwardly turned part being slightly inclined from the vertical, as shown at 17, forming a V-shaped groove, making it practicable to apply the lower edges of the end members to the upturned end flanges 13 of the bottom member, when the end members are considerably inclined outwardly, after which the end members may be moved to the vertical position. The end edges of the side members are first bent inwardly, and then outwardly to form vertically-disposed grooves 18, adapted to receive inwardly bent flanges 19 of the end members, which slip into the said grooves after the lower grooved edges of the end members have been set upon the upturned flanges 13 of the bottom member and then moved inwardly toward the side members in a manner that will be readily understood.

The upper edges of the end members are bent inwardly to form horizontally-disposed flanges 20, which are engaged by the adjacent parts of the top member 9 of the structure, the opposite ends of the top member being bent downwardly to form vertical flanges 21, which overlap the end members at the top and occupy positions outside thereof. The upper edges of the side members 5 and 6 are bent outwardly to form horizontal flanges 22, adapted to enter the grooves 23 and 24 formed on the opposite side edges of the top member. The groove 23 of the top member is formed by bending the edge of the metal first downwardly and slightly inwardly, then upwardly and outwardly on the same incline, thence inwardly in a horizontal direction, and finally

downwardly, as shown at 25, forming a groove which is wider at the top than at the bottom, thus making it practicable to first connect the side of the top, where the groove 23 is located, with the adjacent outturned flange 22 of the side member, when the top is in an inclined position, its opposite edge being raised above the body of the structure. The groove 24 is formed by bending the material of the top of the stove first downwardly in a vertical direction, then inwardly and upwardly to the inner surface of the top, thence inwardly in a horizontal direction, and finally downwardly in a vertical direction, as shown at 26. This groove is, therefore, provided with oppositely-disposed vertical side walls and is adapted to pass over and conceal the adjacent horizontal flange 22 of the side member.

The peculiar shape of the groove 23 makes it unnecessary to provide special locking devices on one side of the stove in order to secure the top in place. However, the outer wall 27 of the groove 24 is slotted, as shown at 28, to receive the top arm 29 of a locking device 30, which consists of a vertically-disposed part 31, which engages the outwardly bent part 32 of a hinge plate or keeper 33, which is secured to the adjacent side wall 6 of the structure by suitable fastening devices, as rivets 34. The part 29 of this locking device is bent to occupy a horizontal position at the upper end of the vertical part 31, the said device being provided at its lower end with a horizontally-disposed member 35 bent at right angles to the member 29 for convenience of manipulation.

During the operation of applying the top member of the structure to the stove, the part 29 of the locking device will occupy a position parallel and in engagement with the adjacent side wall of the stove, whereby it will be overlapped by the depending part 27 of the groove 24. The part 29 of this locking device will occupy a position directly below one of the horizontally-disposed side flanges 22 of the side member. However, as soon as the top member is in position, the locking device may be turned by taking hold of the part 35, which serves as a crank. By giving the part 31 a quarter turn, the member 29 will be thrown into the slot 28 and caused to protrude therefrom sufficiently for locking purposes. There should preferably be a plurality of these locking devices 30 on the side 6 of the structure.

The opposite ends of the top member 9 are locked in the closed position by similar locking devices 36 pivotally mounted on the upper portions of the end members, as shown at 37. These locking devices are provided with upper horizontally-disposed parts 38, which, when in the locking position, engage the upper surface of the opposite ends of the top member. The lower ends 39 of these

locking devices are bent horizontally at right angles to the parts 38 for purposes of manipulation and also for the further purpose of maintaining the locking devices in place within the keeper or hinge plate 37.

In order to secure the end members in place, when they are moved into the vertical position and in proper relation with the side and bottom members, similar locking devices 40 are employed, said locking devices being secured in place by keepers 41. These locking devices are provided at their opposite extremities with cranks 42 and 43, the cranks 42 being for manipulating purposes, while the cranks 43, when in the locking position, engage the end walls of the structure on the outside.

As illustrated in the drawing, two of these locking devices 40 are mounted on each side member of the structure, at each end thereof. there being consequently four locking devices on each side wall of the structure, the same serving to secure the end walls in place. It is evident that a single locking device might be employed for each side of each end member, or a number greater than two, if the size of the structure should seem to require it.

From this, it will be evident that any desired number of the locking devices may be employed. Similar locking devices, designated 44, are mounted on the lower portions of both opposite side walls of the structure, their lower extremities being equipped with cranks 45 for engaging the lower surface of the bottom member of the stove, the upper extremities of the locking devices having manipulating crank arms 46. The lower portions of the opposite end members of the stove are also provided with similar locking devices 47, having lower crank arms 48, engaging the opposite ends of the bottom wall of the structure from below, the upper ends of the locking devices having crank arms 49 bent at right angles to the crank arms 48. As all of these locking devices are substantially identical in structure, further detailed explanation is not considered necessary.

The chamber inclosed by the structure heretofore described has an oven 50, arranged transversely therein, the said oven being composed of separable top and bottom members 51 and 52, respectively, and said members 53. The bottom member is provided at its opposite ends with downwardly-bent flanges 54, while its opposite side edges are equipped with upwardly bent flanges 55. The end flanges 54 engage grooves 56 formed by plates 57, whose lower parts are riveted to the opposite side walls of the structure, as shown at 58, their upper portions 59 being bent outwardly to form the grooves. The upwardly bent flanges 55 of the bottom engage grooves 60 formed on the lower edges of the side members, the said groove being

formed by bending the material of the lower edges of the side members first inwardly in a horizontal direction, then back to the inner surface of the side member, then upwardly, and then inwardly and downwardly, the downwardly bent part 61 being slightly inclined from the vertical. The upper edges of the side members are provided with similarly formed grooves 62 adapted to receive the downwardly bent side flanges 63 of the top member. The opposite end edges of the top member are bent upwardly, as shown at 64, where they engage the inner surfaces of the opposite side walls 5 and 6 of the structure.

Both side members are provided at their opposite extremities with outwardly bent flanges 65, which are adapted to engage plates 66 bent outwardly, as shown at 67, to form grooves for the reception of the said flanges.

The parts of the oven are assembled before the oven is put in place within the stove. It is then applied before the top 9 of the stove is in place, the oven being moved downwardly into position, whereby the flanges 65 are adapted to engage the grooves of the plates 66, the flange 54 entering the groove of the plate 57, thus preventing the further downward movement of the oven.

Access is gained to the oven through an opening formed in the side wall 5, this opening being normally closed by a door 68 hinged at 69 and secured in place by a fastening device 70, pivoted to the door at 71. When in the locked position, the device 70 engages a supporting clip 72, secured to the adjacent side of the stove by rivets or other suitable fastening devices 73. The forward part 74 of the chamber inclosed by the walls of the stove constitutes the fire box and the fuel is inserted through an opening 75 normally closed by a door 76 hinged to the side wall 5 of the stove, as shown at 77. The door is secured in place by a pivoted fastening device 78, engaging a clip 79. The stove is equipped with a damper 80, adapted to close the space above the oven and below the top 9 of the stove, when it is desired to cause the products of combustion from the fire box to pass underneath the

oven in order to escape through the outlet opening 81, which is in communication with the flue. When it is desired to allow the products of combustion to pass freely above the oven, which would be their normal course when the space is uninterrupted, the damper may be moved rearwardly to the position indicated by dotted lines in Fig. 4, since the damper is slidably mounted between the top of the oven and top 9 of the stove. To facilitate the movement of the damper from the outside of the stove, the damper is equipped with a rod 82, which extends rearwardly and passes through an opening 83 in the rear end wall of the stove, the rod protruding sufficiently for purposes of operation.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is:

1. In a knock down stove, top and side members, said top member having grooves formed therein open at the bottom, said side members having flanges adapted to fit into said grooves, one of the grooves of the top member being contracted at its open extremity while the outer wall of the opposite groove is provided with a slot and a fastening device pivotally mounted on the side member adjacent the slot and having an arm adapted to be thrown into the said slot for securing purposes, substantially as described.

2. In a stove, the combination of side and end members, the side members formed at their tops with outwardly extending flanges and a top member formed at one side with a downwardly and inwardly extending flange, said flange being adapted to engage under the flange of one of the side members, said top being formed at its opposite side with a downwardly extending flange adapted to extend below the edge of the flange of the cooperating side member, with means for locking the last named flanges against disengagement from each other.

In testimony whereof we affix our signatures in presence of two witnesses.

LOUIS BENJAMIN GOLDBERG.

NATHAN GOLDBERG.

Witnesses:

F. E. BOWEN,

A. EBERT O'BRIEN.